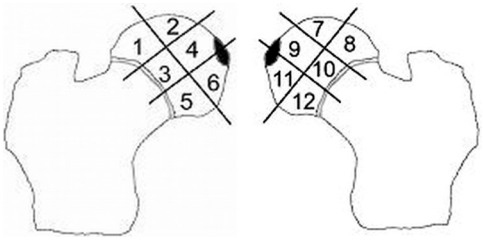
ety International) as defined by Pritzker et al. 2006, differentiates between all levels of changes in articular cartilage. This grading system was used to grade femoral head articular cartilage to (1) determine if there is a consistent pattern of degradation in Osteoarthritis (OA) and (2) investigate areas where healthy cartilage (grades 0-2) can be found for research and clinical purposes.

Methods: 22 femoral heads (average age 64.6 ± 11.9 years, range 45-86 years) were collected following total hip arthroplasty procedures. On the same day of surgery, the articular cartilage was assessed for areas of degradation using a simple application (grade only) of the OARSI grading system. Cartilage was divided into 12 zones (1 through 6 on the anterior face and 7 through 12 on the posterior face) and graded using a modified form of the OARSI grading system (grades 5 and 6 of the true OARSI system were combined into a single grade). The average grade of cartilage and amount of each grade of cartilage (0-2) in each zone were calculated. All protocols and procedures were approved by the University of Wisconsin - Madison, Institutional Review Board.



Modified OARSI grading system

Grade	Key Features
0	Normal Cartilage
1	Threshold of OA, superficial cracks, matrix swelling
2	Discontinuity and some loss of superficial cartilage
3	Vertical fissures into the mid zone cartilage and extended cracks at angles from vertical
4	Cartilage loss and erosion
5	Complete erosion of articular cartilage and any pathology of underlying bone

Results: Cartilage lining the medial face (zones 2,4,6,7,9,11) of the femoral head had significantly greater average grade then lateral face cartilage (zones 1,3,5,8,10,12) ($p<0.0001$). Similarly, superior cartilage (zones 1,2,7,8) had significantly greater average grade then both middle (zones 3,4,9,10) ($p=0.0004$) and inferior cartilage (zones 5,6,11,12) ($p<0.0001$). Middle and Inferior zones did not have signficantly different average grades of cartilage. Statistical significance was found after comparing the amount of grade 1 and 2 cartilage between zones. Grade 1 cartilage was in greater amounts in lateral zones then medial zones ($p=0.03$) and was in the greatest amount in zone 3. Similarly, grade 2 cartilage was in greater amounts in lateral zones then medial zones ($p=0.0002$) and was found in greatest amounts in zones 3 and 5. Normal cartilage (grade 0) showed no differences in amount between zones.

Average Grade of Anterior Face Cartilage

Zone	Anatomical Location on Femoral Head	Average Grade of Cartilage
1	Superior-Lateral	2.98
2	Superior-Medial	3.50
3	Middle-Lateral	2.37
4	Middle-Medial	2.95
5	Inferior-Lateral	2.53
6	Inferior-Medial	2.81

Average Grade of Posterior Face Cartilage

Zone	Anatomical Location of Femoral Head	Average Grade of Cartilage
7	Superior-Medial	3.42
8	Superior-Lateral	3.11
9	Middle-Medial	3.08
10	Middle-Lateral	2.74
11	Inferior-medial	2.87
12	Inferior-Lateral	2.46

Conclusions: As Pritzker et al. 2006 stated, the OARSI grading system permits researchers and clinicians to correlate the stage of OA with the gross pathology of the cartilage. That is, the more advanced the OA, the deeper the cartilage affected and the higher the grade given. Using this system, it was determined that pathologic changes in hip articular cartilage begin in the superior-medial zones and progress inferior-laterally. The exact reasons for this pattern of degradation remains to be determined, however, the effect of differences in amount of weight supported by different surfaces of the femoral head could be a possibility. For research and clinical use, the highest quality cartilage (grades 1 and 2) can be found in inferior-lateral zones of of the femoral head, specifically zones 3 and 5.

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SITE-SPECIFIC PREVALENCE OF OSTEOARTHRITIS IN TWO PREHISPANIC MEXICAN POPULATIONS. A PALAEOPATHOLOGIC STUDY

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Purpose: To determine the prevalence and anatomic distribution of OA findings between two prehispanic populations with different physical activities: hunter-gatherers [South Region of Baja California (SRBC)] and agriculturalists [Cuicuilco, Valley of Mexico (CVM)].

Methods: A descriptive analysis of two collections of human skeletal remains preserved at the Direction of Physical Anthropology of the National Museum of Anthropology in Mexico City. The hunter-gatherers skeletal materials were recovered from different sites in SRBC whereas agrarian skeletal remains were found in the archeological site of Cuicuilco. Their antiquity ranged from 600-150 BC (CVM) and 1320-1420 AD (SRBC). A macroscopic visual examination was performed on each skeleton to assess the occurrence of OA, as defined by the presence of osteophyte formation on the articular surfaces. Age and gender determinations were made by the standards techniques in physical anthropology. Estimated age was categorized into four groups: 20-29, 30-39, 40-49 and 50-yr or older. Skeletons in which the preservation conditions limited its evaluation and those under 20-yr old were excluded
The anatomical sites evaluated were: shoulder (Scapula [glenoid and acromion], clavicle and humeral head), elbow (distal humerus, proximal ulna and radius), hip (acetabulum and femoral head), knee (femoral condyles, tibial articular surfaces and patella) and axial skeleton (cervical, thoracic and lumbar spine segments). The skeletal preservation status, completeness, presence of eburnation, and pitting were also recorded.
Statistics: Descriptive analysis included mean, standard deviation (SD) and proportions. Inferential analysis was supported by: *t* test for parametric and continued variables, two-tail z test was used for non-parametric variables. Stata 8 ® (college station) program and SPSS V.10 ® (Chicago IL) were used.

Results: Both collections comprised a total of 231 skeletons, 130 specimens were excluded (63 due to age under twenty, and 67 because of its degree of damage or fragmentation). One hundred and one specimens were included, of these 57 (56.4%) were from SRBC and 44 (43.5%) from CVM. Gender determination: 43% were female, 50% male, and 7% unknown.

Estimated age (SD): mean age from SRBC was 29.9-yr (±6.8) vs. CVM 35.5-yr (±9.2) (p= 0.0006).
Frequency analysis showed a greater proportion of shoulder and thoracic spine OA in CVM population (44% vs. 19.1% [$p<0.009$] and 36% vs. 6,8% [p=0.04], respectively). However, in SRBC population knee OA was more prevalent (67.4% vs. 52.5% [$p<0.03$]).
A gender sub-analysis showed a greater proportion of male knee (68%) and lumbar spine (55%) OA vs. female 48% (p=0.016) and 46% ($p<0.032$), respectively. However, female displayed a greater proportion of elbow OA (46% vs. 33.8% [$p<0.033$]).
Male agriculturalists showed a higher frequency of axial skeleton and shoulder OA when compared with hunter-gatherers males ($p<0.02$). Conversely, hunter-gatherers displayed a tendency to present more hip OA ($p<0.057$).
Conclusions: Contributions of palaeorheumatology help to understand contemporary diseases. Results of this study support the notion that anatomic distribution of OA vary among different groups, and may be the consequence of biomechanical stress imposed by physical and occupational activities of ancient populations.

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SELECTIVE COX-2 INHIBITION IS BENEFICIAL FOR MATRIX TURNOVER OF OSTEOARTHRITIC CARTILAGE: A CLINICAL STUDY

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Purpose: Selective COX-2 inhibitors are prescribed for many disorders including osteoarthritis (OA). Recent *in vitro* studies showed a positive direct effect of celecoxib, one of the selective COX-2 inhibitors, on human OA cartilage. Such effects are difficult to verify in a clinical trial because changes in OA cartilage, degenerative and reparative, are slow and evaluation of articular cartilage by imaging techniques is still hampered by their limited sensitivity. Therefore, we used an approach in which the benefits of *in vivo* treatment are combined with the benefits of *ex vivo* biochemical analyses of the cartilage.
Methods: Patients with knee OA were treated 4 weeks prior to scheduled knee replacement surgery with celecoxib 2dd200mg, indomethacin 2dd50mg, or received no treatment. At joint replacement surgery, cartilage with underling bone was obtained from femoral condyles and tibial plateaus. The investigators were blinded to the patients' clinical data and medication use. Four randomly taken samples of each donor were used for histological grading of cartilage damage. In addition twenty randomly taken cartilage samples of each donor were used for biochemical analysis of proteoglycan (PG) synthesis, -retention, -release, -content, prostaglandin-E_2 (PGE_2) production. At least 8 donors per group were evaluated. Statistical evaluation of the effects of treatment was performed with an independent-sample T-test. p values less than or equal to 0,05 were considered statistically significant The study was conducted according to the declaration of Helsinki and received ethical approval in all centers.
Results: Average age and gender were comparable between the different treatment groups. The average histological Mankin grade of cartilage damage ranged from 4 to 6 in the different groups and was not statistically significant different between groups. PGE_2 production was diminished for cartilage obtained from both treated groups when compared to the non treated patients (all $p<0.05$).
The non-treated patients (controls) showed a proteoglycan synthesis rate, -retention, -release and -content typical for osteoarthritic cartilage. Patients who had used celecoxib showed a statistically significant higher proteoglycan synthesis compared to the controls ($p<0.03$) and a tendency towards a higher synthesis compared to the indomethacin group ($p<0.09$). The indomethacin treated group did not differ from the controls.
This increased proteoglycan synthesis was accompanied by a better retention of the newly formed proteoglycans; celecoxib had a diminished release of newly formed PGs compared to the untreated controls ($p<0.01$) whereas indomethacin showed no difference compared to controls.
Also for the total release of proteoglycans, the newly formed and the resident ones, significant lower values were found for celecoxib ($p<0.01$) treated patients compared to the non-treated controls. Indomethacin treatment showed a tendency towards a lower total proteoglycan release ($p<0.10$)Most interestingly, a treatment period of 4 weeks resulted even in a significant increase in proteoglycan content in the celecoxib compared to the controls ($p<0.05$) and compared to the indomethacin group ($p<0.03$). The indomethacin group showed even a tendency towards a lower content compared to the control patients ($p<0.14$).
Conclusions: Using this novel approach we were able to demonstrate an *in vivo* generated beneficial effect of celecoxib, in contrast to indomethacin, on OA cartilage proteoglycan turnover.

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PATIENT SUBJECTIVE SATISFACTION AFTER KNEE ARTHROSCOPY FOR OSTEOARTHRITIS

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Purpose: To assess patients' satisfaction after knee arthroscopy for degenerative knee disease, Osteoarthritis (OA).
Methods: – In June 2005 a postal questionnaire was sent to 141 consecutive patients who underwent knee arthroscopy for osteoarthritis and had washout with or without debridment in order to assess their subjective satisfaction after the procedure.
– All these arthroscopies were performed in one theatre under the care of two orthopaedic consultants during the previous two years.
– The patients were asked to score their preoperative pain on a 1-10 scale.
– Satisfaction assessment was based on a simple core question; how do they consider their knees at the time of the questionnaire pain wise and function wise (Same or worse coded unsatisfied and better coded satisfied).
– Then their notes were reviewed to assess any preoperative mechanical symptoms (Clicking, locking or giving way), associated element of trauma, the degree of osteoarthritis they had at the time of arthroscopy, the immediate post operative recovery period and the outpatient clinic follow up records.
– These patients were divided into two groups,
A – with no preoperative mechanical symptoms
B – with preoperative mechanical symptoms
Results: – Out of the 141 patients a total of 107 (75.5%) returned the fully completed questionnaire. Of these, 8 (5.7%) were excluded because of associated history of trauma and 7(5%) were excluded because of insufficient information or their notes were not available.
– The average follow up was 13 months (Range 2-24 months).
– The age, sex distribution, preoperative pain score (A=7.6 versus B=8) and the degree of OA (grade 1-3) in both groups were comparable.
– Patients satisfaction was:
Group A: 32 (74.5%) satisfied, 11(26%) unsatisfied
Group B: 22 (44.9%) satisfied, 27(55%) unsatisfied
With a P value of 0.0057